1891D

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
U.S. ATOMIC ENERGY COMMISSION

MISCELLANEOUS GEOLOGIC INVESTIGATIONS
MAP I–629 (SHEET 2 OF 2)

Base by U.S. Geological Survey, 1956–61.
100,000-foot grid based on Colorado coordinate system, south zone, and Utah coordinate system, south zone
10,000-meter Universal Transverse Mercator grid ticks, zone 12

SCALE 1:250 000

5 0 5 10 15 20 25 MILES
5 0 5 10 15 20 25 KILOMETERS

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS
DATUM IS MEAN SEA LEVEL

1972 MAGNETIC DECLINATION FOR THIS SHEET VARIES FROM 14°15' EASTERLY FOR THE CENTER OF THE WEST EDGE TO 13°45' EASTERLY FOR THE CENTER OF THE EAST EDGE. MEAN ANNUAL CHANGE IS 0°02' WESTERLY

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA.—1972—REPRINTED 1977—G76260

Geology compiled in 1959–68

Structure and uranium deposits

See sheet 1 for explanation of geologic symbols

GEOLOGY, STRUCTURE, AND URANIUM DEPOSITS OF THE CORTEZ QUADRANGLE, COLORADO AND UTAH

Compiled by
D. D. Haynes, J. D. Vogel, and D. G. Wyant

1972

EXPLANATION

U

Uranium ore deposit[1]

Limits not known but probably plottable at map scale. Production totals more than 200,000 pounds U_3O_8

▲ ○ ●

Uranium ore deposits[1]

Limits not plottable at map scale: triangle where production totals more than 200,000 pounds U_3O_8; circle where production totals more than 20,000 but less than 200,000 pounds U_3O_8; dot where production totals less than 20,000 pounds U_3O_8 (20,000 pounds U_3O_8 = 10 short tons U_3O_8 = 8.43 short tons U). Production totals are to January 1967

×

Uranium prospect[1]

Rock contains 0.01 percent or more U_3O_8 or a uranium mineral, but no ore is known to have been produced; not all prospects are shown in areas of numerous deposits

Approximate area of low-grade uranium-bearing rock[1]

In deposits shown, byproduct uranium produced from vanadium-rich ore. Solid line where boundary of area is exposed; dashed where buried

Note: Host rocks for uranium deposits are the following stratigraphic units listed in order of decreasing number of deposits:
Jms, Salt Wash Member of Morrison Formation
Tcs, Shinarump Member of Chinle Formation and lithologically equivalent beds
Tcb, Moss Back Member of Chinle Formation
Jmr, Recapture Member of Morrison Formation
Jmb, Brushy Basin Member of Morrison Formation
Je, Entrada Sandstone
Tm, Moenkopi Formation
Kbc, Burro Canyon Formation
Tcl, lower part of Chinle Formation, undivided
Jmw, Westwater Canyon Member of Morrison Formation
J_Rn, Navajo Sandstone
Uranium ore deposit symbols are plotted directly over the ore deposit which may be either a surface or subsurface deposit but the host rock for all deposits and prospects is the Salt Wash Member of the Morrison Formation except those in the Elk Ridge area (northwestern part of map) and those designated otherwise by red letter symbol (for example, Jmw). Deposits on Elk Ridge southwest of the Chippean Rocks and the Verdure graben are in the Shinarump Member of the Chinle Formation or lithologically equivalent beds unless otherwise labeled. Deposits in the Elk Ridge area north of the Chippean Rocks and the Shay graben are in the Moss Back Member of the Chinle Formation

Contact

Fault

Dashed where approximately located; dotted where concealed. Bar and ball on downthrown side

Anticline Syncline

Folds

Showing direction of plunge

Monocline, showing direction of plunge

A, anticlinal bend or upper axis; shorter arrow indicates steeper dip and accentuation of fold
S, synclinal bend or lower axis; longer arrow indicates lesser regional dip and flattening of fold

Inclined Horizontal

Strike and dip of beds

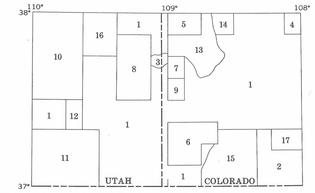
5000

Structure contours

Drawn on base of Dakota Sandstone. Solid where vertical accuracy within 125 feet; long dashed where vertical accuracy probably between 125 and 250 feet; short dashed where vertical accuracy possibly not within 250 feet. Arrow shows direction of dip. Hachures indicate closed contours of basin. Contours dropped where structure unknown or too complex to show at map scale. Contour interval 250 feet

[1]The locations of uranium deposits and prospects were taken from geologic source maps (see Geologic sources, sheet 1) and from information supplied by the U.S. Atomic Energy Commission. The location of the large area of low-grade uranium-bearing rock in southeastern La Plata Mountains from A. L. Bush, U.S. Geol. Survey (unpublished data).

Data on ore production from U.S. Atomic Energy Commission; supplementary production data for some deposits in Elk Ridge area from U.S. Bureau of Mines, Denver, Colorado.



INDEX SHOWING SOURCES OF STRUCTURE DATA

STRUCTURE SOURCES

Structure contours compiled from the following sources. (See "Geologic sources" for complete references.) Elevations of several datum surfaces corrected by isopaching to base of Dakota Sandstone.

1. Structure compiled directly from geologic-topographic maps.
2. Barnes, Baltz, and Hayes (1954). Datum, top of Point Lookout Sandstone.
3. Brown, O. E., and Storch, R. H., 1951, Surface structure map of the Coal Bed Canyon area, San Juan County, Utah; *in* Howard, E. L., and Brown, R. S., Geology of the Coal Bed Canyon structure; *in* Intermountain Assoc. Petroleum Geologists, Ninth Ann. Field Conference—1958, Guidebook to the geology of the Paradox Basin, p. 272. Datum, "on upper bed," Dakota Sandstone.
4. Bush, Marsh, and Taylor (1960, pl. 19). Datum, base of Dakota Sandstone.
5. Cater (1955a, b). Datum, top of Entrada Sandstone.
6. Ekren and Houser (1965, pl. 1). Datum, base of Mancos Shale.
7. Huff and Hamilton, unpub. map. Datum, base of Dakota Sandstone.
8. Huff and Lesure (1965, pl. 1). Datum, base of Dakota Sandstone. Modified in part by the compilers.
9. Lesure and Hanson, unpub. map. Datum, base of Dakota Sandstone.
10. Lewis and Campbell (1965, pl. 2 and fig. 9; supplemented with unpublished data of Lewis and Campbell). Datum, base of Moss Back Member of Chinle Formation and base of Cedar Mesa Sandstone Member of Cutler Formation.
11. O'Sullivan (1965, pl. 1). Datum, top of lower part of Rico Formation in western part, top of Navajo Sandstone in eastern part.
12. Sears (1956, pl. 17). Datum, top of Rico Formation in western part, base of Wingate Sandstone in eastern part.
13. Shawe, Simmons, and Rogers (1961). Datum, base of Dakota Sandstone.
14. Vogel (1960). Datum, top of Entrada Sandstone.
15. Wanek (1954). Datum, top of Point Lookout Sandstone.
16. Witkind (1964, pls. 1 and 4). Datum, phantom horizon about 500 feet above base of Mancos Shale. Modified in part by the authors.
17. Zapp (1949). Datum, top of Point Lookout Sandstone.

This map was reproduced by electronic color scanning of an earlier printing (1972).